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EXAMINER

CORDRAY, DENNIS R

ART UNIT	PAPER NUMBER
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1791

MAIL DATE	DELIVERY MODE
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10/26/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/659,089

Applicant(s)

SALEMI ET AL.

Examiner

Dennis Cordray

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 6 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 30-51 and 53-55 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 30-51 and 53-55 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

Applicant's amendments, filed 8/27/2007, have overcome the previous rejections. Therefore, the rejections has been withdrawn. However, upon further consideration and due to the amendments, new grounds of rejection are made as detailed below.

Claim Objections

Claims 53-55 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The Claims depend from Claim 52, which is nonexistent. For the purpose of this examination, it is assumed that Claims 53-55 are intended to depend from Claim 51.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 30-31, 34, 36, 38-39, 43-45, 47-48 and 55 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 30-31, 34, 36, 38-39, 43-45 and 47-48 recite papers and methods for making papers having combinations of layers not described in the originally filed Specification and Claims. Although papers and processes are described for combining some of the layers in a particular order, the specific combinations of layers, adhesives and scoring recited in the rejected claims are not described. If Applicant believes the Specification and Claims as originally filed do support the specific combinations, the Examiner requests that the specific page and lines providing such support for each claim be provided in the response to this Office Action.

Claims 30 and 34 recite "providing a plurality of depressions uniformly spaced across the first side of the sheet." The instant Specification does not disclose a plurality of depressions uniformly spaced across the first side of the sheet.

New Claim 55 recites that the liquid separated from an object on the antimicrobial surface is located on the top surface of the sheet. The original Specification discloses that the liquid is associated with the indented texture of the sheet (p 8, 6th par) or that the paper channels liquids off of the indented antimicrobial paper to prevent liquid pooling and/or slippage caused from liquid pooling (p 9, 6th par). Page 15, lines 2-12 describes a process of using the antimicrobial paper by placing the antimicrobial paper on a surface, such as the base of a box, a shelf, a table, a pan, a cage, a floor, a tray, a cart, a seat or the like, which surface can be located in a kitchen, laboratory, warehouse, animal cage, storage room, hospital room, examination room or the like. Page 17, lines 13-15 recite that the high points 6 and low points 8 keep food or objects from slipping from the indented antimicrobial paper 10 onto the surface. The surface

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referred to is obviously the surface upon which the indented antimicrobial paper is placed. Page 17, lines 28-31 state, "Moreover, the high points 6 and the low points 8 may force liquids into the channels 7 and/or move the liquids through the channels 7 from the indented antimicrobial paper 10 onto the surface." It is apparent from the preceding discussion of the instant Specification that the paper is designed to move liquids through the channels 7 from the indented microbial paper 10 (i.e.-from the paper surface) and onto the surface (surface on which the paper is placed) to prevent liquid pooling on the indented antimicrobial paper. Nowhere is it stated that the separated liquid is located on the top surface of the sheet.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 30, 32-34, 37, 41, 44-51 and 53-55 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 30 and 34 recite "providing a plurality of depressions uniformly spaced across the first side of the sheet." Claim 32 recites "providing a plurality of channels in the sheet." Claim 33 recites "providing a plurality of depressions in the sheet." Claim 44 recites "forming channels in the sheet." The Specification recites on p 6, lines 19-21 "the process has the step of forming an indentation in the sheet." The title and drawings reveal an indented multilayered antimicrobial paper, not a paper only having channels or depressions in the base sheet or in one side of the base sheet. The descriptions of

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the flowcharts for producing the paper recite that "the layer combination ... may be pressed with, for example, an indenter to texture the layer combination with the high points 6 and the low points 8 and the channels 7." (p 20, lines 23-27). Similar recitations are found on p 22, lines 1-4; p 23, lines 9-12; p 24, lines 20-23 and at several other locations. From the conflicting disclosures, it is not clear how the indentations are intended to be incorporated into the antimicrobial paper.

Claim 32 recites the limitation "scoring the first water resistant layer." There is insufficient antecedent basis for this limitation (first water resistant layer) in the claim since only one water resistant layer is claimed.

Claim 34 recites "adhering a paper layer to the sheet" but fails to recite whether the paper layer is adhered to the first side of the sheet, the second side of the sheet, among the plurality of water resistant layers, on top of the antimicrobial layer or at any other of the possible locations, thus making the structure of the paper indefinite.

Claim 37 recites a paper layer connected to the top side of the base and located between the antimicrobial surface and the base, but fails to recite the location of the paper layer in relation to the first water resistant layer, which is also located between the antimicrobial surface and the base, thus making the structure of the paper indefinite.

Claim 41 recites a plurality of paper layers connected to the top side of the base and located between the antimicrobial surface and the base, but fails to recite the location of the plurality of paper layers in relation to the first water resistant layer, which is also located between the antimicrobial surface and the base, thus making the structure of the paper indefinite.

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Claim 43 recites a second water resistant layer connected to the antimicrobial surface, but fails to recite whether the second water resistant layer is connected to the top side or to the bottom side of the antimicrobial surface, thus making the structure of the paper indefinite.

Claim 46 recites "connecting a first water resistant layer to a bottom side of the antimicrobial layer, but fails to define what is considered to be the "bottom side." The sheet of Claim 44, from which Claim 46 depends, only recites a first side and a second side.

Claim 48 recites "connecting a paper layer to the first side of the sheet wherein the antimicrobial layer is connected to the paper layer," but fails to recite the location of the paper layer in relation to the first water resistant layer, which is located between the antimicrobial surface and the base, thus making the structure of the paper indefinite.

Claims 49-50 recite shredding the sheet or dividing the sheet into a plurality of sheets. Claims 49-50 depend from Claim 44, which recites a process for making a paper by connecting various layers to a sheet having a first side and a second side. It is not clear if the sheet, assumed to be the sheet having a first side and a second side, is to be shredded or cut into a plurality of sheets prior to connecting the other various layers thereto or if the sheet is somehow shredded or cut into a plurality of sheets after the layers are connected. In the latter case, are the connected layers intended to be shredded or cut as well?

Claim 51 recites a sheet having "a top surface and a bottom surface" as well as a water resistant layer residing "between the top surface and the bottom surface." The

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sheet is apparently one layer and it is not clear how the water resistant layer can reside between the top and bottom surfaces of the sheet layer.

Claim 51 also recites "forming indentations in the sheet." It is not clear how a step of forming indentations in the sheet relates to a method for using the the paper to protect against contamination.

Claim 53 recites "wrapping the antimicrobial surface around the object." It is not clear if the intent is to only wrap the antimicrobial surface, which is one layer of the paper, around the object or if the entire paper comprising the antimicrobial surface is wrapped around the object.

Claims 45 and 47 depend from Claim 44 and inherit the indefiniteness thereof.

Claims 54 and 55 depend from Claim 51 and inherit the indefiniteness thereof.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 30-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Santelli (US 2004/0071902) in view of Trogolo et al (6436422) and Nakamura (6179141) and further in view of Otten et al (6274232).

Santelli discloses a process for making a biocide containing laminate comprising:

- providing a plastic film having first and second sides, which are opposite one another,
- treating the first side of the film with a corona discharge (scoring) to make it receptive to adhesives,

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- cold laminating (connecting) a paper sheet to the plastic film,
- associating a biocide (bactericide, fungicide, pesticide, moldicide, mildicide, viricide) with the laminate (p 2, par 19; p 3, pars 28 and 30).

The Examiner considers the recited biocides to be antimicrobials. The particular biocide can be selected by one of ordinary skill in the art for the intended purpose (p 3, par 26).

The plastic film can be polyethylene, thus forming a water resistant layer, (p 3, par 29; p 5, pars 52 and 53). Additional paper and plastic layers can be applied using adhesive cold lamination to form laminates having multiple plastic and paper layers. Laminates of paper-plastic, paper-plastic-paper, plastic-paper-plastic, plastic-paper-plastic-paper-plastic, paper-plastic-plastic, paper-plastic-plastic -paper, paper-plastic-paper-plastic are specifically recited (p 2, pars 19 and 21; p 3, par 34; p 4, par 42; p 5, pars 50 and 54). The biocide can be applied in a variety of ways depending on the form of the laminate (p 3, par 27). When multiple layer laminates are made, multiple biocide applications can be made to the paper layers or the adhesives (p 5, par 50). The biocide can be applied by spraying, brushing or dipping (p 4, par 37). The laminate is made as a sheeting material, which the Examiner construes as being substantially flat and forming a plane, and can further be made into a pouch, envelope or container, wrapped around an article (e.g.-food), or made into a tape for sealing a carton (p 5, pars 47-49, 51 and 53). The sheets inherently have a length and a width.

In the disclosure of Santelli, one layer can be called the "sheet having a first side and a second side" or "base having a top side and a bottom side" of the instant claims and the one or more plastic layers are water resistant layers. The paper layers or

adhesive layers between the plies can contain biocidal material thus can be antimicrobial layers. Thus, in a multilayer laminate, one or more water resistant layers and a paper layer can be located between the "sheet having a first side and a second side" or "base having a top side and a bottom side" and an antimicrobial layer. Further, the top and bottom layers can be antimicrobial layers. For instance, a paper-plastic-plastic -paper laminate can comprise, in sequence, an antimicrobial layer, a water resistant layer, a base sheet and an antimicrobial layer. Absent evidence showing special or surprising advantages of a particular structure, one of ordinary skill in the art would have readily envisioned any of the claimed combinations of layers from the disclosure of Santelli.

While the order of assembly of the laminates of Santelli differs from the claimed process, no evidence has been provided to demonstrate that the sequence of laminating the layers is critical to the instant invention and performing the laminating steps in any sequence would have been obvious to one of ordinary skill in the art in the absence of evidence of new or unexpected results. *Ex parte Rubin*, 128 USPQ 440 (Bd. App. 1959) (Prior art reference disclosing a process of making a laminated sheet wherein a base sheet is first coated with a metallic film and thereafter impregnated with a thermosetting material was held to render prima facie obvious claims directed to a process of making a laminated sheet by reversing the order of the prior art process steps.). See also *In re Burhans*, 154 F.2d 690, 69 USPQ 330 (CCPA 1946) (selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results).

Santelli does not disclose an antimicrobial layer of polyethylene containing silver zeolite or a plurality of depressions or channels in the sheet.

Trogolo et al discloses that an antibiotic low density polyethylene having 20 wt.% silver containing zeolite is commercially available and is used to make an antimicrobial coating for application to various substrates by spraying or dipping (Abs; col 5, lines 4-21 and 42-47; col 6, lines 1-7 and 51-53).

Nakamura discloses an antimicrobial layer for preventing bacteria from entering an airtight container. The antimicrobial layer comprises silver zeolite in polyethylene (col 1, lines 7-16; col 5, lines 3-13).

Trogolo et al and Nakamura do not disclose depressions or channels in the sheet.

Otten et al discloses an absorbent and cut resistant sheet comprising multiple layers, including an absorbent layer, a polymeric cut resistant layer, a cover layer that includes anti-bacterial agents and a liquid impervious backing layer. The backing layer can also contain antibacterial agents (Abs; col 1, lines 12-17; col 3, lines 26-33; col 3, line 64 to col 4, line 21; col 5, lines 24-28 and 61-65; col 6, lines 58-65; col 7, lines 14-16). The cut resistant layer has a plurality of openings punched, pressed or moulded into the layer to provide drainage of liquids at the cutting surface to the surface of the lower absorbent layer (col 4, lines 45-56; Fig 1). Figure 1 shows these openings arranged in rows extending across the length and width of the layer. The cut resistant layer can also comprise a plurality of fold lines that are grooves (or channels) extending across the entire sheet, and which are formed by pressing, embossing or moulding (col

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5, line 66 to col 6, line 10). The fold lines allow easier folding of the sheet for handling or disposal (col 6, lines 25-32). The sheet protects a countertop during food preparation (col 1, lines 10-26).

Santelli, Trogolo et al, Nakamura, Otten et al and the instant invention and the instant invention is analogous as pertaining to treating laminates to impart antibiotic or antimicrobial properties thereto. It would have been obvious to one of ordinary skill in the art to apply a commercially available polyethylene containing silver zeolite to one or more paper layer to form an antimicrobial layers in the laminate of Santelli in view of Trogolo et al and Nakamura as a well known antimicrobial composition usable with food items. It would also have been obvious to provide a plurality of depressions too allow drainage of liquids away from the surface contacting food or other objects. Alternatively, it would have been obvious to provide a plurality of grooves to facilitate handling and disposal of the sheet.

Claims 49-51 and 53-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Santelli in view of Trogolo et al and Nakamura and further in view of Otten et al, as used in the preceding rejection, and even further in view of Weder (5921062).

The disclosures of Santelli, Trogolo et al, Nakamura and Otten et al are used as above. Santelli discloses using the antimicrobial laminated paper for forming a package to protect a food substance (Abs). Santelli, Trogolo et al, Nakamura and Otten et al do

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not disclose shredding the sheet or dividing the sheet into a plurality of sheets, nor do they disclose the method of using the paper to protect against contamination.

Weder discloses a packaging sheet having an antimicrobial agent (Abs). The sheet comprises a base sheet with portions thereof that permit selective control of the atmosphere to which the contents are exposed and an antimicrobial agent disposed thereon (surface antimicrobial layer) (col 4, lines 45-54; col 7, lines 46-47). The sheet has an upper and a lower surface and may comprise multiple layers connected together or adhered together by bonding material (col 4, lines 64-66; col 5, lines 26-32; col 6, lines 22-23). The sheet can comprise thermoplastic or paper layers (col 7, lines 14-24). The antimicrobial material layer can be applied by spraying, brushing, immersion, or in a label, sticker or decal applied to the sheet (col 8, lines 55 to col 9, line 9). The antimicrobial layer can be a second sheet of material connected to the base sheet (col 9, line 55-58).

Weder discloses that a plurality of the packaging sheets can be connected linearly and rolled. Preferably the plurality of sheets are connected by perforations (Fig 5) such that they may be separated from the roll (col 10, lines 13-22), thus dividing the sheet into a plurality of sheets. Figure 5 shows a row of perforations (indentations) spaced uniformly across the sheet. The sheet can also be shredded into small pieces for decorative purposes (col 7, lines 8-11; col 11, lines 39-46, Fig 11).

Weder discloses a method of using the sheet to protect an object (cols 12-14 and 18-19; Claims 1-4) by wrapping the sheet around the object (Figures 12-15 and 16-19) or to completely enclose an object (Figures 29-30 and 32-33). The sheet, shown with a

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perimeter larger than the object to be wrapped, is placed on and covers a flat surface (Figs 12, 16 and 29). The object is placed on the sheet within the perimeter of the sheet and the sheet separates the object from the surface. The sheet is wrapped around the object (Figs 13-14, 17-19) or the object is completely enclosed (Figs 29, 30, 32 and 33) in the sheet. The object is thus protected by the antimicrobial surface (Claims 1-4).

Although Weder does not expressly disclose that the object is placed on the antimicrobial surface, it would have been obvious to one of ordinary skill in the art to do so to take full advantage of the antimicrobial properties of the sheet.

The art of Santelli, Trogolo et al, Nakamura, Otten et al, Weder and the instant invention is analogous as pertaining to antimicrobial paper and the use thereof. Both Santelli and Weder disclose the use of the antimicrobial paper to enclose and protect food. It would have been obvious to one of ordinary skill in the art to protect food or another object by wrapping or enclosing it with the flexible sheet of Santelli in view of Trogolo et al and Nakamura and further in view of Otten et al using the method of Weder as a known and functionally equivalent option. Liquids on the antimicrobial surface would be separated from the food or object thereon and drain through the openings to the top surface of the sheet below, as taught by Otten et al.

The instant Claims recite a broad range of weight for the antimicrobial paper. Since the instant Disclosure recites no particular inventive advantage for using paper of the claimed weight, but merely recites "a weight range between, for example, 16.5 pounds and 90.00 pounds" (p 16, lines 1-2), it would have been obvious to one of ordinary skill in the art to use a paper of any weight, including the claimed range, as a

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functionally equivalent option and have a reasonable expectation of success. It would also have been obvious to shred the paper and use the shreds in a decorative manner as a known use for such papers to minimize fungal and bacterial growth on the decorations.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Cordray whose telephone number is 571-272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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